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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/943,277 | 08/30/2001 | Ahmad Jalali | PA000054 | 8791 |
| 23696 | 7590 | 08/24/2005 | EXAMINER | |
| Qualcomm Incorporated Patents Department 5775 Morehouse Drive San Diego, CA 92121-1714 | | | TSEGAYE, SABA | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2662 | |

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/943,277 | JALALI, AHMAD | |
| | Examiner | Art Unit | |
| | Saba Tsegaye | 2662 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11,14-19,21-29 and 31-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11,14-19,21-29 and 31-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to the amendment filed on 05/02/05. Claims 1-11, 14-19, 21-29 and 31-39 are pending. Currently no claims are in condition for allowance.

Claim Rejections - 35 USC § 112

2. Claims 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 18, the phrases “a second receiver, a second processor” are confusing of because there is no mention of a first receiver and a first processor in claim 16.

Regarding claim 19, it is not clear how the second receiver configured to receive the determined pre-coder parameters (when the second receiver receives **a non pre-coded** reference (see claim 18)).

Claim Rejections - 35 USC § 102

3. Claims 16, 21-25, 29, 31, 32 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Kanterakis et al. (US 6,606,341).

Regarding claim 16, Kanterakis discloses an apparatus for pre-coding in a communication system comprising:

a pre-coder (422) configured to pre-code first reference data in accordance with pre-coder parameters (see fig. 4; column);

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a first transmitter (430) communicatively coupled to said pre-coder configured to (see figs 4; column 5, lines 1-12):

transmit the pre-coded data (430); and

transmit a non pre-coded second reference data on a common pilot signal (453), wherein the common pilot signal is sent on a separate channel from the pre-coded data (column 5, lines 45-51).

Regarding claims 21 and 24, Kanterakis discloses the method wherein the reference data are continuous reference data (column 12, lines 53-55).

Regarding claims 22 and 25, Kanterakis discloses the apparatus wherein the first transmitter is further configured to transmit the non pre-coded first reference data discontinuously (column 12, lines 53-55).

Regarding claim 23, Kanterakis discloses the apparatus wherein the non pre-coded second reference data comprise a pilot data (see fig. 4, 453).

Regarding claim 29, Kanterakis discloses an apparatus for demodulating pre-coded data, comprising:

a first receiver configured to(see fig. 4):

receive a pre-coded reference data and a pre-coded payload data (422);

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receive non pre-coded reference data on a common pilot signal (453), wherein the common pilot signal is received on a separate channel from the pre-coded data ; and

determine demodulator parameters in accordance with the received pr-coded reference data and the non pre-coded reference data (417, 421); and

a demodulator communicatively coupled to the receiver configured to demodulate the pre-coded payload data in accordance with the determined demodulator parameters (418, 421).

Regarding claim 31, Kanterakis discloses the apparatus wherein the reference data comprise a pre-coded pilot signal (see fig. 4, 453).

Regarding claim 32 and 33, Kanterakis discloses the apparatus wherein the reference data are continuous reference data (column 12, lines 53-55).

Regarding claim 37, Kanterakis discloses an apparatus for demodulating pre-coded data, comprising:

means for receiving a pre-coded reference data and a pre-coded payload data (417;

means for receiving non pre-coded reference data on a common pilot signal wherein the common pilot signal is received on a separate channel from the pre-coded data (417);

means for determining demodulator parameters in accordance with the received pre-coded reference data and the non pre-coded reference data (417, 418); and

means for demodulating the pre-coded payload data in accordance with the determined demodulator parameters (418, 421).

Claim Rejections - 35 USC § 103

4. Claims 1-8, 11, 14, 15, 26, 36, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanterakis et al. in view of Saints (US 5,903,554).

Regarding claims 1-5, 8, 11, 26 and 36, Kanterakis discloses all the claim limitations as stated above, except for the first data comprises pre-coding dedicated pilot data.

Saints teaches a pre-coded pilot signal (column 4, lines 45-64; column 5, lines 14-41).

It would have been obvious to one ordinary skill in the art at the time of the invention was made to use the teachings of Saints of pre-coding a pilot signal in the system of Kanterakis in order to control the transmission power of the transmitter (see Saints, column 5, lines 15-22; summary of the invention).

Regarding claims 6, 7, 14 and 15, Kanterakis discloses the method wherein the transmitting a non pre-coded reference data comprises: transmitting a continuous/discontinuous non pre-coded reference data (column 12, lines 53-55).

Regarding claim 38, Kanterakis discloses, in Fig. 4, a method for pre-coding in a communication system, the method comprising:

pre-coding predetermined data (422) in accordance with a set of pre-coder parameters to obtain burst of pr-coded predetermined data;

transmitting over the communication link a second pilot burst (453) to the destination station, wherein the second pilot burst comprises non-pre-coded predetermined data (column 5, lines 45-51).

However, Kanterakis does not disclose the pre-coded reference data is a first pilot signal.

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Saints teaches a pre-coded pilot signal (57, 55).

It would have been obvious to one ordinary skill in the art at the time of the invention was made to use the teachings of Saints of pre-coding a pilot signal in the system of Kanterakis in order to provide a high quality of pilot signal.

Regarding claim 39, Kanterakis discloses the method further comprising:

receiving, from the destination station, an estimate of characteristics of the communication link (417, 418); and adjusting the set of pre-coder parameters in accordance with the estimate (421).

5. Claims 9, 10, 18, 19, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanterakis et al. in view of Chung (US 4,995,057).

Kanterakis discloses all the claim limitations as stated above. Further, Kanterakis discloses that a packet is translated to a carrier frequency, filtered and amplified by transmitter RF section 430 and pas through circulator 410. However, Kanterakis does not expressly disclose a processor communicability coupled to the at least two equalizers.

Chung discloses, in Fig. 3, equalizer 380, 381 and sampler 384 (column 3, lines 13-21; column 6, lines 35-67; column 8, line 64-column 9, line 11).

It would have been obvious to one ordinary skill in the art at the time the invention was made to use more than one equalizer, such as that suggested by Chung, in the apparatus of Kanterakis in order to optimize the quality of data and to assure the noise at the input to the receiver decoder is both Gaussian and white.

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6. Claims 17, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanterakis in view of Abeta et al. (US 6,647,003).

Kanterakis discloses all the claim limitations as stated above, except for a digital signal processor communicatively coupled to the memory storage unit and capable of executing instruction.

Abeta teaches that a transmitting processor 610 comprises a transmitting section 710, a channel encoder 722 and inserting section 724 which are implemented in the form of software using DSP and a memory that stores programs.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kanterakis's apparatus to utilize a system where a digital signal processor communicatively coupled to the memory storage unit and capable of executing instruction, as taught by Abeta in order to provide much higher performance and much more efficient system.

Response to Arguments

7. Applicant's arguments with respect to claims 1-11, 14-19, 21-29 and 31-39 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saba Tsegaye whose telephone number is (571) 272-3091. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

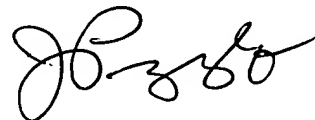
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ST

August 21, 2005

A handwritten signature in black ink, appearing to read 'J. Pezzlo', with a stylized, cursive script.

JOHN PEZZLO
PRIMARY EXAMINER